



**Wyandotte Creek
Groundwater Sustainability Agency
Agenda Transmittal**

Agenda Item: 4

Subject: Draft Proposed New Monitoring Network Locations

Contact: Becky Fairbanks

Phone: 530-552-3587

Meeting Date: 12/12/2024

Regular Agenda

Department Summary:

At the November 21, 2024 board meeting, the Board reviewed and approved new monitoring network locations for the Wyandotte Creek Subbasin as part of the Data Gap Identification and Data Improvement Project funded by the Sustainable Groundwater Management Grant Program. This item will focus on the budget implications of the approved monitoring network, including anticipated annual maintenance and monitoring costs. The discussion will ensure the Board has a clear understanding of long-term financial commitments associated with these enhancements.

Fiscal Impact: Initial construction and implementation covered by SGM Grant funding. Ongoing operation and maintenance of new monitoring wells could be funded by GSA fees after March 2026.

Staff Recommendations: Accept as information or provide direction to staff.

Wyandotte Creek Subbasin Update on Proposed Monitoring Network Enhancements

Prepared by

The LWA Team in coordination with the Wyandotte Creek GSA

Funding provided by the California Department of Water Resources

November 2024



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Wyandotte Creek
GROUNDWATER SUSTAINABILITY
AGENCY



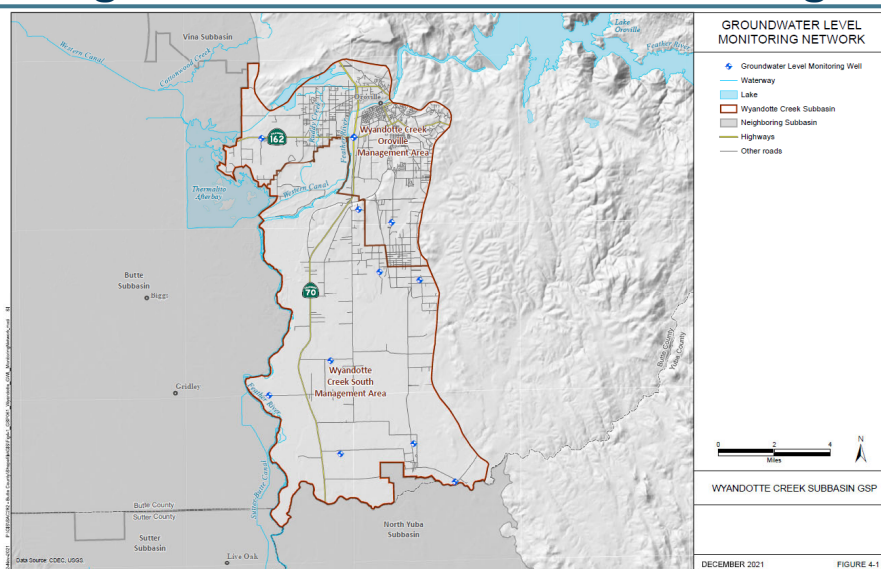
Outline

- Project Objectives
- Overview Existing Groundwater Level Monitoring Network
- Monitoring Network Development Steps
- Proposed Enhancements
- Domestic Well Survey & Monitoring Plan
- Monitoring Costs
- Next Steps

Objectives

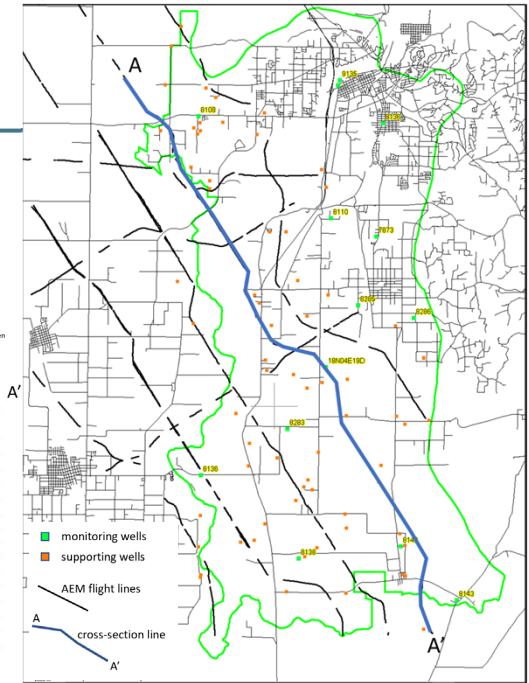
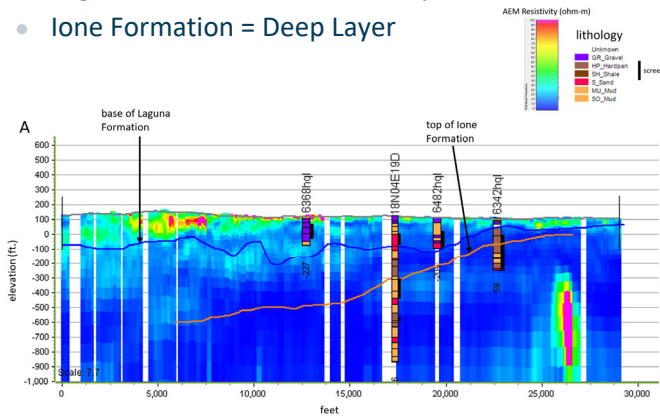
- Address data gaps identified in the Wyandotte Creek GSP & DWR's Determination Letter
- Monitor all beneficial uses and users of groundwater including:
 - ✓ Interconnected surface waters (ISWs),
 - ✓ Groundwater dependent ecosystems (GDEs),
 - ✓ Domestic well owners, and
 - ✓ Agricultural users
- Available funding to drill a minimum of fifteen (15) shallow wells and three (3) multi-completion wells, install minimum of five (5) stream gages, and equip ten (10) domestic wells with monitoring equipment.

Existing Groundwater Level Monitoring Network



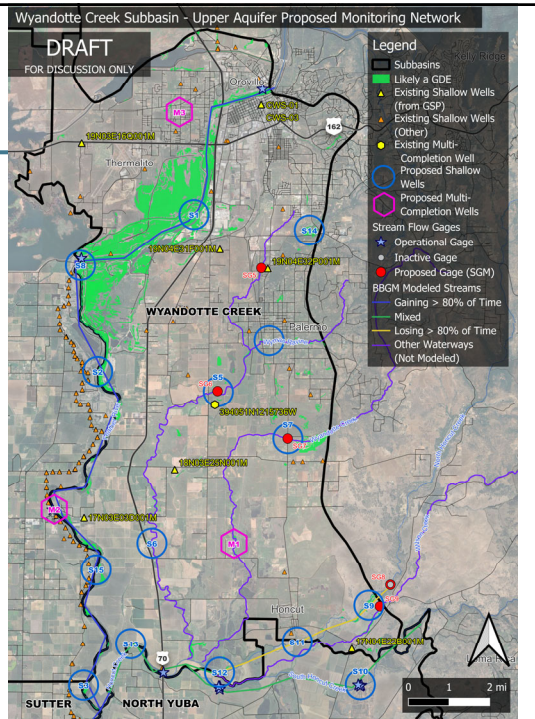
Monitoring Network Development

- Identified existing shallow and deep wells using DWR AEM Surveys
- Laguna Formation = Shallow Layer
- Lone Formation = Deep Layer



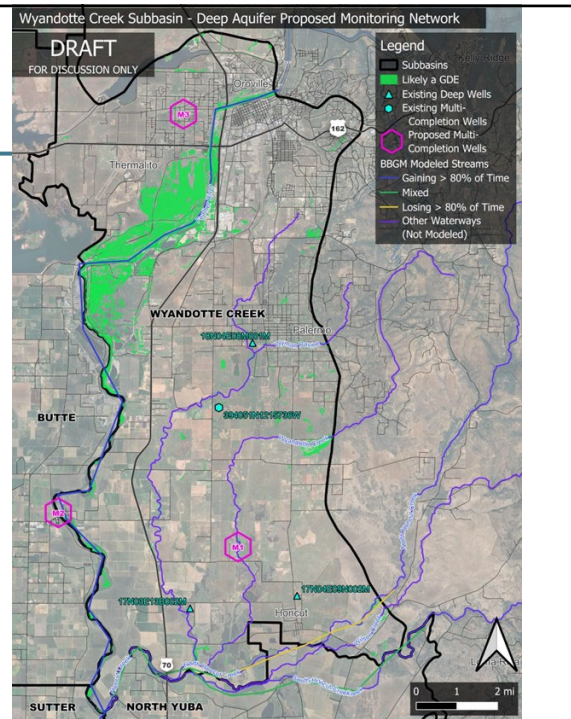
Proposed Shallow Monitoring Network

- Eight (8) existing shallow wells
- One (1) existing multi-completion well
- Enhancements include:
 - ✓ fifteen (15) shallow wells
 - ✓ three (3) multi-completion wells
 - ✓ five (5) stream gages



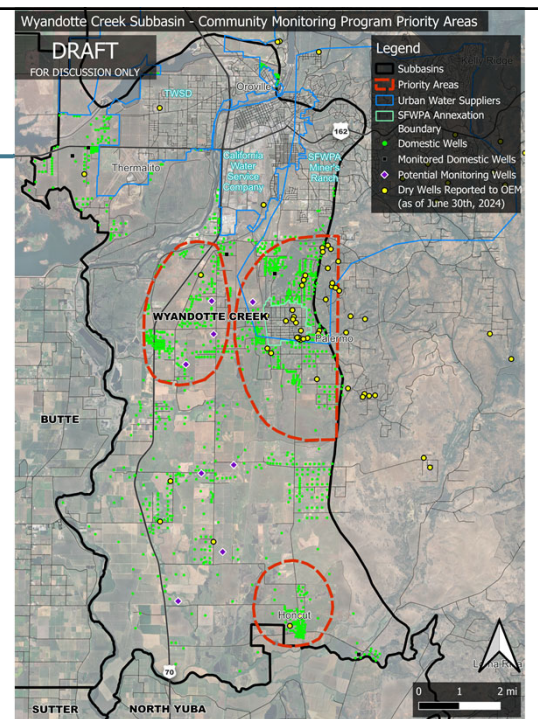
Proposed Deep Monitoring Network

- Three (3) existing deep wells
- One (1) existing multi-completion well
- Enhancements include:
 - ✓ three (3) multi-completion wells



Domestic Well Survey & Monitoring Plan

- Roughly 1,340 domestic wells in the subbasin
- Five (5) existing domestic wells monitored periodically by DWR
- Eight (8) additional domestic wells available for monitoring
- Budget to equip ten (10) domestic wells with continuous monitoring equipment



Real-Time Monitoring

- Groundwater Level Monitoring Sites
 - Installation Cost: \$6,500 - \$11,000 per site
 - Annual on-going O&M Cost: \$1,000 - \$2,500 per site

- Stream Flow Gages
 - Installation Cost: up to \$35,000 per site
 - Annual on-going O&M Cost: \$4,000 - \$8,000 per site



Figure 1. Groundwater level monitoring site with ENO Scientific sensor.



Figure 2. In-Situ pressure transducer for measuring groundwater levels and stream stage.

Real-Time Monitoring (continued)

Table 1. Installation and Annual O&M Cost for Real-Time Monitoring.

Locations	Number of Sites	Installation Cost	Average Annual O&M Cost
Domestic Wells	10	\$70,000	\$15,000
Shallow Wells	15	\$105,000	\$22,500
Multi-Completion	3	\$33,000	\$6,000
Stream Gages	5	\$175,000	\$30,000
Total:	33	\$383,000	\$73,500

Assumptions:

- 1.) Domestic and Shallow Well Installation Cost = \$7,000 per site; O&M Cost = \$1,500 per site.
- 2.) Multi-Completion Well Installation Cost = \$11,000 per site; O&M Cost = \$2,000 per site.
- 3.) Stream Gage Installation Cost = \$35,000 per site; O&M Cost = \$6,000 per site.
- 4.) Sites will be maintained indefinitely (e.g., replace sensors, dataloggers, etc. as needed). Routine site maintenance (e.g., clean solar panel, replace desiccant, etc.) completed by lower cost employee (e.g., intern).
- 5.) Stream gages calibrated annually to ensure accuracy of stage-discharge relationship.
- 6.) Real-time monitoring planned only at new monitoring locations; additional installations on existing monitoring sites may be considered as grant funding allows.
- 7.) SGM grant pays for installation costs; GSA is responsible for ongoing site maintenance.

Next Steps

- Access agreements, final designs, & bid documents complete January 2025
- Well contractors notice to proceed by February 2025
- New wells installed by June 2025
- Stream gage installations start December 2024

Questions?